REMARKS

Claims 133-148, 150-175 are in the application.

Claim 148 is cancelled.

Claims 153-175 are new.

Claims 133-152 are renumbered from 156-175 pursuant to 37 C.F.R. § 1.126.

Claims 133-148 and 150-152 are amended.

An amendment to the Abstract of the Invention is provided herewith.

INTERVIEW SUMMARY

The undersigned conducted a brief telephone interview with the Examiner on May 4, 2005 to further elucidate the office action. In particular, applicant sought clarification of how the McCalley et al. reference met element (b) of claim 133. The Examiner indicated that he read the reference and the claims broadly, and therefore believed that the disclosure of McCalley et al. met the claim limitations.

The Examiner requested that applicant provide support for the claim language in the 1991 priority application. Applicant has complied, and provided certain examples of support in the 1991 priority document with respect to independent claim 133, and reserves the right to demonstrate support for other claims as the need arises. The cited passages are not necessarily the only support available in the priority document. It should be understood that, given the size of the priority document, the applicant has provided these specific examples as exemplary illustration of support only, and there may be other support, not specifically indicated. The scope of the claims is therefore not

intended to be limited by the particular passages cited below as support for the claim language.

REJECTION OF THE CLAIMS

Claims 133-152 are rejected under 35 U.S.C. § 102(e) as being allegedly anticipated by McCalley et al., US 5,191,410.

McCalley et al. fails to provide a wireless remote control or input therefor, providing an input to the processor, as provided in element (b) of claim 133. McCalley et al. disclose that the user interface comprises a telephone keypad. The telephone keypad is a part of a wired telephone system, and therefore passes DTMF tones to the telephone central office, which then switches them to the voice network interface 46 of the local operating center (LOC) for processing.

As best understood, the following paragraph of McCalley et al. summarizes the architecture:

> The present invention manipulates, processes and transmits all data destined for a particular subscriber in digital format. In order to reach a subscriber's TV set, the digital data is transmitted from a particular local operating center to the CATV company's headend on a high speed digital link comprising a single distribution channel. Transmission of all the digital audio, video, graphic overlay and control information on a single distribution channel results in efficient use of the channel's capacity. At the CATV headend, the data is block converted onto a CATV distribution frequency, and transmitted to a plurality of field devices which are locally distributed throughout the area serviced by the system. These field devices, known as "presentation players", each have their own identification ("ID") number, and can identify and intercept the digital data addressed to them. When a subscriber requests a particular presentation, the interactive system ensures that the particular digital data required to construct that presentation is transmitted to the subscriber's local presentation player. At this local presentation player, the digital data is transformed into an analog format which is compatible with television transmission and playback. The presentation player then transmits the analog information along a short section of cable between the presentation player and the subscriber's television set. Thus, the data,

> from the time it is produced by the commercial client until it is received at a presentation player is maintained in digital form, thereby ensuring that the integrity and visual quality of the presentations is far superior to that available in the prior art analog system. (Col. 6, line 62-Col. 7, line 24)

If one analogizes the local operating center (LOC) of McCalley et al. with the "processor" of the present claims, then the processor (which receives the signal from the remote control) is remote from the site of reproduction or presentation to the user (e.g., the user's television), while the present claims require that the output for presenting or transferring the digital media signals for reproduction be local to the processor. Thus, the analogy, and therefore the rejection, fails.

If, on the other hand, the "local presentation player" is analogized with the processor, then there is no analog to the "network interface for transmitting digital information from said processor to a remote location over a communications network, said information identifying a digital media signal for desired reproduction based on an input received from said remote control" (per element (c) of claim 133), and this analogy, and therefore the rejection also fails.

The system described by McCalley et al. does not provide a graphic user interface. McCalley et al discloses that the telephone keypad receives an input from the user, which is then routed through the telephone network to the head end, indicating a user selection, without any apparent manipulation of the screen elements or spatial coordination. A graphic user interface requires a spatial relation between the pointing device and elements shown on the display, which is absent in McCalley et al. It is therefore respectfully submitted that McCalley et al. is distinguished, and the claims are patentable.

New claims 153-175 are believed allowable on the same basis as claims 133-152.

An early Notice of Allowance is respectfully solicited.

Respectfully submitted,

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By

Date 7/29/05

CLAIM CHART SHOWING SUPPORT IN 1991 PRIORITY TEXT
(US 5,903,454, USSN 07/812,805)

133. An apparatus for processing digital media signals, comprising:	
(a) a digital processor for controlling said apparatus;	T_R, the average computer response time, was calculated individually for each subject. In order to attain a baseline, the researcher, an expert user of the systems, performed the tasks on both a 10 MHz (Intel 80286 based) and a 33 MHz (Intel 80386DX based) computer. The faster processor had a negligible computer response time, taken as $T_R = 0$. The time using the faster computer was then subtracted from the time using the slower computer to achieve a measure of how much slower the 10 MHz computer was. (Col. 54, line 66-Col. 55, line 7) It is noted that all functions of a VCR would also be simplified by the use of such powerful processors, and thus it is not only these advanced functions which are facilitated by the processors. It is also noted that these image recognition functions need not necessarily all be executed local to the user, and may in fact be centralized. This would be advantageous for two reasons: first, the user need not have an entire system of hardware in the VCR, and second, many of the operations which must be performed are common to a number of users, so that there is a net efficiency to be gained. (Col. 71, lines 41-51)
(b) a graphic user interface, ~~having~~ receiving a wireless remote control ~~providing a command~~ graphic user interface input to said processor and outputting information for generating a graphic user interface display;	The apparatus typically involves a remote control entry device, and the interface of the present invention contains a displayed graphical interface for programming programmable devices. The present invention seeks more accurate programming through the use of program verification to ensure that the input program is both valid and executable. Thus, it has a mechanism to store and check to verify that there are no conflicting programs. An apparatus according to the present invention can be connected, for example, to any infrared programmable device in order to simplify the programming process. By way of example only, an improved video cassette recorder (VCR) interface forms the basis of a disclosed example. It is, of course, realized that the present method and apparatus may be applied to any programmable controller, i.e., any device which monitors an event or sensor and causes an event when certain conditions or parameters are met, and may also be used in other programming environments, which are not event driven. Recent studies suggest that a "direct manipulation" style of interface has advantages for menu selection tasks. This type of interface provides visual objects on the screen which can be manipulated by "pointing" and "clicking" on the them. For example, the popular Graphical User Interfaces ("GUIs"), known in the art, use a direct manipulation style interface. A device such as a touch-screen, with a more natural selection technique, is technically preferable to the direct manipulation method. However, its low accuracy and high cost make other inputs more commercially practical. In addition, the user must be within arms' length of the touch-screen display. In a cursor positioning task, Albert (1982) found the trackball to be the most accurate pointing device and the touch-screen to be the least accurate when compared with other input devices such as the light pen, joystick, data tablet, trackball, and keyboard. Epps (1986) found both the mouse and trackball to be somewhat faster than both the touch-pad and joystick, but he concluded that there were no significant performance differences between the mouse and trackball as compared with the touch-pad and joystick. In one embodiment of the present invention, the apparatus comprises a program entry device for a VCR. The human interface element has an infrared device to allow wireless communication between the human interface device and the VCR apparatus proper. The present embodiment was constructed and tested using HyperPAD™, a rapid prototyping

	package for an IBM-PC Compatible Computer. It is, of course obvious that the present embodiment could be incorporated in a commercial VCR machine by those skilled in the art, or be implemented on many types of general purpose computers with output screens which allow on-screen feedback for the programming operation. Further, the present embodiment can control an infrared remote controlled VCR or translate the programming information and program an infrared remote control through an interface to an infrared transmitter. An IBM PC-AT compatible (MS-DOS, Intel 80286-10 MHz) computer was used to test the two simulations. In order to simulate the use of a remote control device in programming the VCR, an infrared device made by NView.TM. was attached to the computer. This device came with a keyboard that was used to "teach" a Memorex.TM. Universal Remote so that the desired actions could be obtained. By using a universal remote, the computer could be controlled by using a remote control.
(c) a network interface for transmitting digital information from said processor to a remote location over a communications network, said information identifying a <u>desired</u> digital media signal for ~~desired~~ reproduction based<u>, at least in part,</u> on an input received from said <u>input</u> ~~remote control~~; and	The present invention also allows encryption and decryption of material, much as the Videocipher series systems from General Instruments, and the fractal enciphering methods of EMC.sup.2 and Iterated Systems, Inc. The present invention, however, is not limited to broadcasts, and instead could implement a system for both broadcasts and prerecorded materials. In the case of copying from one tape to another, such a system could not only provide the herein mentioned library functions of the present invention, it could also be used to aid in copy protection, serial copy management, and a pay-per-view royalty collection system. Such a system could be implemented by way of a telecommunication function incorporated in the device, shown as block 1808 of FIG. 18, or an electronic tag which records user activity relating to a tape or the like. A royalty fee, etc., could automatically be registered to the machine either by telecommunication or registry with the electronic tag, allowing new viewer options to be provided as compared with present VCR's. For example, an encrypted tape or other source material (so that special playback equipment need be used, and a usage registered), used with this device, could be decrypted by a decryption key available by telecommunication with a communication center, remote from the user, in a decryption unit, shown schematically as the decrypt unit 1806a of FIG. 18. During acquisition of the electronic key, a VCR device of an embodiment of the present invention would indicate its identity, and an account is charged a fee for such use. Such a system could also be used for controlled access software, for example for a computer, wherein a remote account is charged for use of the software. Such a system differs from the normal "key" or "dongle" because it requires on-line access for an encryption key, which may offer different levels of use. It also differs from a call-in registration, because of the automatic nature of the telecommunication. This presently described system differs from normal pay-per-view techniques because it allows, in certain instances, the user to schedule the viewing. Finally, with an encryption function implemented in the VCR, the device allows a user to create and distribute custom "software" or program material. In addition, the present controller could then act as the "telecommunication center" and authorize decryption of the material. The present invention is advantageous in this application because it provides an advanced user interface for creating a program (i.e. a sequence of instructions), and it assists the user in selecting from the available programs, without having presented the user with a detailed description of the programs, i.e., the user may select the choice based on characteristics rather than literal description. In the case of encrypted program source material, it is particularly advantageous if the characterization of the program occurs without charging the account of the user for such characterization, and only charging the account if the program is viewed by the user. The user may make a viewing decision based on the recommendation of the interface system, or may review the decision based on the title or description of the program. FIG. 24 shows a system for correlating a user's preferences with a prospective or real-time occurrence of an event. The input device 2401, which is a remote control with a pointing device, such as a trackball, provides the user's input to the control 2402. The program is stored in a program memory 2403, after it is entered. The control 2402 controls a plant 2404, which is a VCR. The control also controls an on-screen programming interface 2405, through which the user

	interactively enters the program information. Each program entry of the user is submitted to the user history database and preferences module 2406, which may also receive explicit preference information, input by the user through the input device 2401. The prospective and real time event characterization unit 2407 uses any and all information available in order to determine the character of a signal input, which is a video signal, from the signal receiver 2408. A signal analyzer 2409 provides a preliminary analysis and characterization of the signal, which is input to the prospective and real time event characterization unit 2407. The prospective and real time event characterization unit 2407 also interacts and receives an input from a telecommunication module 2410, which in turn interacts and receives information from an on-line database 2411. A user preference and event correlator 2412 produces an output relating to a relatedness of an event or prospective event and a user preference. In the event of a high correlation or relatedness, the control 2402 determines that the event or prospective event is a likely or most likely predicted action. The prospective event discussed above refers to a scheduled event, which is likely to occur in the future. The characterization unit also has a local database 2413 for storing schedule information and the like. It is noted that, if the standard audio tracks are used to record the information, then standard audio frequency modems and recording/receiving methods are available. These standard modems range in speed from 300 baud to 19,200 baud, e.g. v.FAST, v.32bis, etc. While these systems are designed for dial-up telecommunications, and are therefore slower than necessary and incorporate features unnecessary for closed systems, they require a minimum of design effort and the same circuitry may be multiplexed and also be used for telecommunication with an on-line database, such as a database of broadcast listings, discussed above.
(d) an output, controlled by, and local to, said processor, for <u>transferring</u> ~~presenting~~ the desired digital media ~~signals~~ <u>signal</u> for reproduction thereof.	The present embodiment was constructed and tested using HyperPAD.TM., a rapid prototyping package for an IBM-PC Compatible Computer. It is, of course obvious that the present embodiment could be incorporated in a commercial VCR machine by those skilled in the art, or be implemented on many types of general purpose computers with output screens which allow on-screen feedback for the programming operation. Further, the present embodiment can control an infrared remote controlled VCR or translate the programming information and program an infrared remote control through an interface to an infrared transmitter. The smart screens may be implemented as follows. The controller may be, for example, a Macintosh ci computer, operating under Macintosh 7.0 operating system. The Hypercard 2.0 software may be used to implement the screen interface, which incorporates the above-described features, which is generally compatible with the Hyperpad software described above. HyperCard is mentioned due to its capabilities to reference external programs, thus allowing interfacing to various software and hardware devices. A more global scripting language, such as Frontier by UserLand Software Inc., may also be used, especially where low level hardware control of interfaced devices, such as a VCR, multimedia adapter, or the like is desired. Other scripting languages include versions of REXX, by IBM, available on many platforms. The input device is an Apple ADB mouse, and the output display is an 8 bit or 24 bit graphics color adapter connected to, e.g., a 14" color monitor. In addition, various parameters concerning the use of the interface are stored in the computer's memory, and a non-volatile mass storage device, such as a hard disk drive, or EEPROM or EPROM, as well as battery backed RAM could also be used. The apparatus typically involves a remote control entry device, and the interface of the present invention contains a displayed graphical interface for programming programmable devices. The present invention seeks more accurate programming through the use of program verification to ensure that the input program is both valid and executable. Thus, it has a mechanism to store and check to verify that there are no conflicting programs. An apparatus according to the present invention can be connected, for example, to any infrared programmable device in order to simplify the programming process. By way of example only, an improved video cassette recorder (VCR)

interface forms the basis of a disclosed example. It is, of course, realized that the present method and apparatus may be applied to any programmable controller, i.e., any device which monitors an event or sensor and causes an event when certain conditions or parameters are met, and may also be used in other programming environments, which are not event driven.

Some display systems have a higher available resolution than others, and the interface is preferably arranged to optimize the intended display for the resolution limits and display format of the intended or available display device. Further, even with sufficient resolution, certain displays are of small size, and thus the visibility of the information may also be optimized by taking into consideration the size, resolution, contrast, brightness of the display, ambient conditions, characteristics of the human visual system, factors specific for a known user, and the available options of the apparatus. Thus, the interface may employ a number of methods to optimize the visibility of the information for a variety of display devices, storage formats and transmission standards, which may include: NTSC, PAL, SECAM, CCIR-601, HDTV, MUSE, IDTV, VHS, S-VHS, Beta, SuperBeta, Hi-8 mm, videotel or picturephone (P.times.64), computer display standards (CGA, HGC, EGA, VGA, SVGA, XGA, Macintosh (TM), 8514, Private Eye (TM), LCD, etc.), etc., over a number of size ranges, e.g. about 1 cm.sup.2 to about 10 m.sup.2, with a resolution range including displays having about 16 dot matrix characters or about 16 by 64 dots to about 2,048 by 2,048 dots. Techniques such as antialiasing, font substitution, hinting, precompensating for expected distortion, etc., may all be employed to improve the readability of the display under various circumstances.

It is also noted that the present technology could also be applied to any sort of mass storage, such as for a personal computer. In such a case, a characteristic of the computer file, which is analogous to the broadcast program in temporary storage of a VCR, is classified according to some criteria, which may be explicit, such as an explicit header or identifying information, or implicit, such as a document in letter format, or a memorandum, as well as by words and word proximity. In particular, such a recognition system could differentiate various clients or authors based on the content of the document, and these could be stored in different manner. The text analysis system of a text-based computer storage system is analogous to the program classification system of the VCR embodiment of the present invention. However, there is a further analogy, in that the VCR could incorporate optical character recognition of text displayed in the program material, or directly receive text information as a part of a closed caption or videotext system. Thus, the VCR device of the present invention could recognize and classify programs based on textual cues, and make decisions based on these cues. This might also provide a simple method of discriminating program material, for example, if a commercial does not include close caption or Second Audio Program (SAP), while the desired program does, or vice versa, then a commercial could be discriminated from a program with very little computational expenditure.

The catalog of entries is also preferably stored in non-volatile memory, such as hard disk, associated with the VCR controller. This allows the random selection of a tape from a library, without need for manually scanning the contents of each tape. This also facilitates the random storage of recordings on tape, without the requirement of storing related entries in physical proximity with one another so that they may be easily located. This, in turn, allows more efficient use of tape, because of reduced empty space at the end of a tape. The apparatus is shown schematically in FIG. 20, in which a tape drive motor 2001, controlled by a transport control 2002, which in turn is controlled by the control 2003, moves a tape 2005 past a reading head 2004. The output of the reading head 2004 is processed by the amplifier/demodulator 2006, which produces a split output signal. One part of the output signal comprises the analog signal path 2007, which is described elsewhere. A digital reading circuit 2008 transmits the digital information to a digital information detecting circuit 2009, which in turn decodes the information and provides it to the control 2003.

In order to retrieve an entry, the user interacts with the same interface that is used for

	programming the recorder functions; however, the user selects different menu selections, which guide him to the available selections. This function, instead of focusing mainly on the particular user's history in order to predict a selection, would analyze the entire library, regardless of which user instituted the recording. Further, there would likely be a bias against performing identically the most recently executed function, and rather the predicted function would be an analogous function, based on a programmed or inferred user preference. This is because it is unlikely that a user will perform an identical action repeatedly, but a pattern may still be derived. It is noted that the present library functions differ from the prior art VHS tape index function, because the present index is intelligent, and does not require the user to mark an index location and explicitly program the VCR to shuttle to that location. Rather, the index is content based. Another advantage of the present library function is that it can automatically switch media. Such a system might be used, for example, if a user wishes to record, e.g., "The Tonight Show With Johnny Carson" in highly compressed form, e.g. MPEG at 200:1 compression, except during the performance of a musical guest, at which time the recording should be as lossless as possible. A normal VCR could hardly be used to implement such a function even manually, because the tape speed (the analogy of quality level) cannot be changed in mid recording. The present system could recognize the desired special segment, record it as desired, and indicate the specific parameters on the information directory. The recorded information may then be retrieved sequentially, as in a normal VCR, or the desired selection may be preferentially retrieved. If the interface of the present invention is set to automatically record such special requests, the catalog section would then be available for the user to indicate which selections were recorded based upon the implicit request of the user. Because the interface has the ability to characterize the input and record these characterizations in the index, the user may make an explicit request different from the recording criteria, after a selection has been recorded. The controller would then search the index for matching entries, which could then be retrieved based on the index, and without a manual search of the entire tape. Other advantages of the present system are obvious to those of ordinary skill in the art. A library system is available from Open Eyes Video, called "Scene Locator", which implements a non-intelligent system for indexing the contents of a videotape. See NewMedia, November/December 1991, p. 69. It is noted that, if the standard audio tracks are used to record the information, then standard audio frequency modems and recording/receiving methods are available. These standard modems range in speed from 300 baud to 19,200 baud, e.g. v.FAST, v.32bis, etc. While these systems are designed for dial-up telecommunications, and are therefore slower than necessary and incorporate features unnecessary for closed systems, they require a minimum of design effort and the same circuitry may be multiplexed and also be used for telecommunication with an on-line database, such as a database of broadcast listings, discussed above. The Videotext standard may also be used to record the catalog or indexing information on the tape. This method, however, if used while desired material is on the screen, makes it difficult to change the information after it has been recorded, because the videotext uses the video channel, during non-visible scan periods thereof. The use of on-line database listings may be used by the present interface to provide information to be downloaded and incorporated in the index entry of the library function, and may also be used as part of the intelligent determination of the content of a broadcast. This information may further be used for explicitly programming the interface by the user, in that the user may be explicitly presented with the available choices available from the database.